

WHAT IS CLAIMED IS:

1 1. An expandable tubular stent comprising:
2 an expandable tubular body having a plurality of interconnected
3 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
4 body formed at least in part by an undulated structure and at least one intermediate
5 cylindrical wall section formed at least in part by an undulated structure adjacent to the
6 first cylindrical wall sections, and

7 at least one S-shaped connector which extends between and is secured to
8 an undulation of the first cylindrical wall section and an undulation of the adjacent
9 intermediate cylindrical wall section and which is configured to provide both expansion
10 and contraction.

1 2. The expandable tubular stent of claim 1, wherein one end of the S-
2 shaped connector is secured to a bend point of an undulation of the first cylindrical wall
3 section at a location off-set from the most proximate portion of the bend point of the
4 undulation and wherein an opposite end of the S-shaped connector is secured to a bend
5 point of an undulation of the adjacent intermediate cylindrical wall section at a location
6 off-set from the most proximate portion of the bend point.

1 3. An expandable tubular stent comprising:
2 an expandable tubular body having a plurality of interconnected
3 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
4 body formed at least in part by an undulated structure and at least one intermediate
5 cylindrical wall section formed at least in part by an undulated structure adjacent to the
6 first cylindrical wall sections, and
7 at least connector which is formed at least in part by an S-shaped structure
8 and which extends between and is secured to an undulation of the first cylindrical wall
9 section and an undulation of the adjacent intermediate cylindrical wall section.

1 4. An expandable tubular stent comprising:
2 an expandable tubular body having a plurality of interconnected
3 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
4 body formed at least in part by an undulated structure and at least one intermediate

5 cylindrical wall section formed at least in part by an undulated structure adjacent to the
6 first cylindrical wall sections, and

7 at least one connector which is formed at least in part by a structure having
8 at least one double curvature and which extends between and is secured to an undulation
9 of the first cylindrical wall section and an undulation of the adjacent intermediate
10 cylindrical wall section.

1 5. An expandable tubular stent comprising:

2 an expandable tubular body having a plurality of interconnected
3 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
4 body formed at least in part by a serpentine structure and at least one intermediate
5 cylindrical wall section formed at least in part by a serpentine structure adjacent to the
6 first cylindrical wall sections, and

7 at least one S-shaped connector which extends between and is secured to a a
8 protruding element of the first cylindrical wall section and a protruding element of the
9 adjacent intermediate cylindrical wall section and which is configured to provide both
10 expansion and contraction.

1 6. The expandable tubular stent of claim 5, wherein one end of the S-
2 shaped connector is secured to a bend point of the protruding element of the first
3 cylindrical wall section at a location off-set from the most proximate portion of the bend
4 point of the protruding element and wherein an opposite end of the S-shaped connector is
5 secured to a bend point of a protruding element of the adjacent intermediate cylindrical
6 wall section at a location off-set from the most proximate portion of the bend point.

1 7 . An expandable tubular stent comprising:

2 an expandable tubular body having a plurality of interconnected
3 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
4 body formed at least in part by a serpentine structure and at least one intermediate
5 cylindrical wall section formed at least in part by a serpentine structure adjacent to the
6 first cylindrical wall sections, and

7 at least connector which is formed at least in part by an S-shaped structure
8 and which extends between and is secured to a protruding element of the first cylindrical
9 wall section and a protruding element of the adjacent intermediate cylindrical wall
10 section.

1 8. An expandable tubular stent comprising:

2 an expandable tubular body having a plurality of interconnected

3 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
4 body formed at least in part by a serpentine structure and at least one intermediate
5 cylindrical wall section formed at least in part by a serpentine structure adjacent to the
6 first cylindrical wall sections, and

7 at least one connector which is formed at least in part by a structure having

8 at least one double curvature and which extends between and is secured to a protruding
9 element of the first cylindrical wall section and a protruding element of the adjacent
10 intermediate cylindrical wall section.

1 9. A catheter/prosthesis assembly comprising:

2 a catheter body having a prosthesis delivery balloon:

3 an expandable tubular body having a plurality of interconnected
4 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
5 body formed at least in part by an undulated structure and at least one intermediate
6 cylindrical wall section formed at least in part by an undulated structure adjacent to the
7 first cylindrical wall sections, and

8 at least one S-shaped connector which extends between and is secured to

9 an undulation of the first cylindrical wall section and an undulation of the adjacent
10 intermediate cylindrical wall section and which is configured to provide both expansion
11 and contraction.

1 10. The catheter/prosthesis assembly of claim 9, wherein one end of

2 the S-shaped connector is secured to a bend point of an undulation of the first cylindrical
3 wall section at a location off-set from the most proximate portion of the bend point of the
4 undulation and wherein an opposite end of the S-shaped connector is secured to a bend
5 point of an undulation of the adjacent intermediate cylindrical wall section at a location
6 off-set from the most proximate portion of the bend point.

1 11. A catheter/prosthesis assembly comprising:

2 a catheter body having a prosthesis delivery balloon:

3 an expandable tubular body having a plurality of interconnected
4 cylindrical wall sections including a first cylindrical wall section at one end of the tubular

5 body formed at least in part by an undulated structure and at least one intermediate
6 cylindrical wall section formed at least in part by an undulated structure adjacent to the
7 first cylindrical wall sections, and

8 at least connector which is formed at least in part by an S-shaped structure
9 and which extends between and is secured to an undulation of the first cylindrical wall
10 section and an undulation of the adjacent intermediate cylindrical wall section.

1 12. A catheter/prosthesis assembly comprising:
2 a catheter body having a prosthesis delivery balloon;
3 an expandable tubular body having a plurality of interconnected
4 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
5 body formed at least in part by an undulated structure and at least one intermediate
6 cylindrical wall section formed at least in part by an undulated structure adjacent to the
7 first cylindrical wall sections, and
8 at least one connector which is formed at least in part by a structure having
9 at least one double curvature and which extends between and is secured to an undulation
10 of the first cylindrical wall section and an undulation of the adjacent intermediate
11 cylindrical wall section.

1 13. A catheter/prosthesis assembly comprising:
2 a catheter body having a prosthesis delivery balloon;
3 an expandable tubular body having a plurality of interconnected
4 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
5 body formed at least in part by a serpentine structure and at least one intermediate
6 cylindrical wall section formed at least in part by a serpentine structure adjacent to the
7 first cylindrical wall sections, and
8 at least one S-shaped connector which extends between and is secured to a
9 protruding element of the first cylindrical wall section and a protruding element of the
10 adjacent intermediate cylindrical wall section and which is configured to provide both
11 expansion and contraction.

1 14. The catheter/prosthesis assembly of claim 13, wherein one end of
2 the S-shaped connector is secured to a bend point of the protruding element of the first
3 cylindrical wall section at a location off-set from the most proximate portion of the bend
4 point of the protruding element and wherein an opposite end of the S-shaped connector is

5 secured to a bend point of a protruding element of the adjacent intermediate cylindrical
6 wall section at a location off-set from the most proximate portion of the bend point.

1 15. A catheter/prosthesis assembly comprising:
2 a catheter body having a prosthesis delivery balloon:
3 an expandable tubular body having a plurality of interconnected
4 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
5 body formed at least in part by a serpentine structure and at least one intermediate
6 cylindrical wall section formed at least in part by a serpentine structure adjacent to the
7 first cylindrical wall sections, and
8 at least connector which is formed at least in part by an S-shaped structure
9 and which extends between and is secured to a protruding element of the first cylindrical
10 wall section and a protruding element of the adjacent intermediate cylindrical wall
11 section.

1 16. A catheter/prosthesis assembly comprising:
2 a catheter body having a prosthesis delivery balloon:
3 an expandable tubular body having a plurality of interconnected
4 cylindrical wall sections including a first cylindrical wall section at one end of the tubular
5 body formed at least in part by a serpentine structure and at least one intermediate
6 cylindrical wall section formed at least in part by a serpentine structure adjacent to the
7 first cylindrical wall sections, and
8 at least one connector which is formed at least in part by a structure having
9 at least one double curvature and which extends between and is secured to a protruding
10 element of the first cylindrical wall section and a protruding element of the adjacent
11 intermediate cylindrical wall section.